# Textile Technology Digest

Published Monthly
by the
Institute of Textile Technology
Charlottesville, Virginia

Vol. 2, No. 3 March, 1945

# ABSTRACTS

## I. ORGANIC FIBERS

*FIBER NOMENCLATURE.* E. Karrer. *Rayon Textile Monthly 26,* 20-1 (Jan. 1945). A new classification of fibers is proposed which, by the use of "fil" as a suffix, can be adapted to the systematic nomenclature of all fibers. Two main classes, "natfils" and "synfils" for natural and man-made products, would cover all fibers. These in turn would each be of 2 kinds, "orfils" and "inorfils" for organic and inorganic fibers. All cellulose fibers would be "celfils." Those of natural origin already have names; rayons would be named according to origin, e. g. "visfils," "cufils" and "celacfils."

### I, 1. Vegetable

*FIBER CONSUMPTION.* Robert B. Evans, Southern Regional Research Laboratory, USDA. *Cotton 109,* No. 1, 80-4 (Jan. 1945). Even though artificial and synthetic fibers have made great progress in recent years cotton still accounts for twice as much fiber consumption as all other fibers combined. Statistical data are presented in charts and tables.

*WOOL FROM COTTON.* Lynne M. Lamm. *Chem. Eng. News 23,* 4 (Jan. 10, 1945). A plan to develop Oscar von Kohorn's cellulose wool (made from linters and cotton waste) was urged in Congress 2 years ago but was shelved. The fiber is so much like wool that it is extremely difficult even for experts to detect it in blends.

---

INFORMATION RELATING TO COTTON PROBLEMS (ASSEMBLED FOR USE IN DEVELOPING FARM PROGRAMS). Russell R. Smith, Agricultural Adjustment Agency, Washington, 1944; 68 pp.; gratis.

ADDED HONORS FOR KING COTTON. Rayco Cotton Linter Div., Railway Supply & Mfg. Co., Cincinnati, Ohio, 1944; 24 pp.

Reviewed in *Chem. Eng. News 23,* 95 (Jan. 10, 1945).

SURVEY OF CHEMICAL COMPOSITION OF COTTON FIBERS, COTTONSEED, PEANUTS AND SWEET POTATOES; literature review (with bibliographies). John D. Guthrie, Carol L. Hollpauir, Edward T. Steiner and Mack S. Standsbury. AIC-61, Southern Regional Research Laboratory, USDA, New Orleans, 1944; 86 pp.; gratis.

### I, 2. Animal

*WOOL SYMPOSIUM, AATCC. Am. Dyestuff Reptr. 34,* P42-63, P68-76 (Jan. 29, Feb. 12, 1945). Introduction (Milton Harris); Wool Dyeing; Effects of Variations in Wool (R. H. Kienle, G. L. Royer and H. R. McCleary); Continuous Indigo Dyeing of Wool Stock (Werner von Bergen, T. Crowley and W. Brommelsiek; Shrink-Resistant treatments for Army Woolens (Harry F. Clapham); Some Factors Contributing to the Felting of Wool (Milton Harris).

---

*TREATING WOOL.* Harry S. Drum & Alfred Hopkins (to Smith, Drum and Co.). USP 2 368 916, Feb. 6. Apparatus for forming a uniformly thick mat of raw wool and passing it under a solvent spray.

---

FELT, HAIR. Joint Army-Navy Specification 32-F-2d (supersedes 32-F-2c). Bureau of Supplies & Accounts, U. S. Navy, Washington 1944; 3 pp.; gratis.

### I, 3. Artificial (derived from natural products)

*ALGINATE FIBERS.* N. H. Chamberlain, A. Johnson & J. B. Speakman, Leeds Univ. *J. Soc. Dyers & Colourists 61,* 13-20 (Jan. 1945). Alginates of Ba, Ca, Al, Cr and Be yield filaments which are highly hygroscopic and show considerable hysteresis between their adsorption and desorption curves. The metal content is preferably limited to 0.06-0.1 gram-atom per 100 g. of alginic acid. The high density of alginate rayons (1.735-1.78) is a disadvantage but the high metal content makes them completely nonflammable and therefore useful in making curtains and home finishing fabrics. Since Ca alginates can be stored at ordinary humidities without deterioration it will probably be the stock material for woven and knit fabrics, being rendered alkali-resistant by treatment with Cr (or Be) acetate in finishing.

*SYNTHETIC FIBERS.* Symposium, AATCC. *Am. Dyestuff Reptr. 34,* P21-37 (Jan. 15, 1945). Introduction by Harold D. Smith; papers by Wm. C. Appel, survey of the synthetic fibers; H. Wickliffe Rose, synthetic fibers in military and postwar fabrics; Arthur W. Etchells, survey of dyeing synthetic fibers; and C. W. Bendigo, use of synthetic fibers in knit fabrics.

### I, 3a. Cellulosic rayons

*BRITISH RAYON.* Anon. *Rayon Textile Monthly 26,* 12-3 (Jan. 1945). Actual and projected technical advances in the British rayon industry include increasing exploitation of rayon's versatility in continuous filament and cut staple products. New types of staple fiber are in prospect, and high tenacity yarns will be developed for a variety of uses. The tow-to-top process for rayon staple went into production in England in 1939 but has been hampered by war conditions.

*RAYON NOMENCLATURE.* Anon. *Rayon Textile Monthly 26,* 13-4 (Jan. 1945). The British Cotton Industry Research Assoc'n has adopted the term "rayon" as a generic name for all man-made fibers. Editorial comment is opposed to such usage of the word in America.

*CUPRAMMONIUM CELLULOSE.* W. James Lyons, USDA, Southern Regional Research Lab. *J. Chem. Physics 13,* 43-52 (Jan. 1945). An empirical modification of the Baker-Philippoff equation yields the same value for viscosity regardless of changes in velocity gradient. It agrees well with data on cuprammonium cellulose solutions at concentrations below 5 g/liter.

*RAYON NOMENCLATURE.* A. G. Scroggie, ASTM Committee D-13. *Rayon Textile Monthly 26,* 15-6 (Jan. 1945); Cotton *109,* No. 2, 115-6 (Feb. 1945). In addition to its other disadvantages, use of the term "rayon" as a generic word for all man-made fibers is illegal in America Either a new word should be coined for the purpose, or an existing word should be brought into general approval and then adopted.

*RAYON DEVELOPMENT.* Symposium. *Rayon Textile Monthly 26,* 2-4 (Jan. 1945). Meeting wartime demands with rayon (L. A. Yerkes, Du Pont); high strength viscose yarn (Wm. C. Appleton, Am. Viscose Corp.); rayon ahead (C. McD. Carr, Am. Enka Corp.); acetate (Camille Dreyfus, Celanese Corp. of America); improved production methods (M. P. Epstein, Ind. Rayon Corp.); and editorial comments.

---

*CONCENTRATING VISCOSE.* Francis B. Cramer (to E. I. du Pont de Nemours & Co.). USP 2 369 718, Feb. 20. Viscose solutions are concentrated by extracting parts of the water with about 20 wt.-% of pyridine and drawing off the layer of aqueous pyridine from the concentrated viscose.

*RAYON.* W. H. Furness (to Am. Rayon Co.). USP 2 370 156, Feb. 27. Rayon and foils are produced continuously from cuprammonium cellulose solution by spinning into a circulating NaOH bath continuously recovering $Cu(OH)_2$ and $NH_3$, from the bath and returning the recovered NaOH to the bath.

*COPPER RECOVERY.* Wm. H. Furness (to Am. Rayon Co.). USP 2 370 157, Feb. 27. Copper sulfate is recovered from the wash liquors formed in the manufacture of cuprammonium rayon and is used again in making the cuprammonium cellulose solution. Recovery is effected by adding $Cu(OH)_2$ to the waste liquor in order to convert $CuSO_4$ to a basic sulfate.

### I, 3b. Protein fibers

*SILK FIBROIN.* D. Coleman and F. O. Howitt, British Cotton Industry Research Assoc'n. (Silk Section) *Nature 155,* 78-9 (Jan. 20, 1945). Denaturation of silk fibroin by dissolution in cupriethylenediamine is reversible by neutralization and dialysis. Under proper conditions renaturation is complete. Evidently denaturation consists merely in unfolding molecular chains against weak fold-retaining forces. This agrees with the general theory of solubility of macromolecules.

---

*CASEIN FIBER.* Walter F. Tschudin to Sandoz A.-G.). USP 2 368 690, Feb. 6. Water-insoluble casein fibers are improved by treatment with a salt of trivalent Cr at 50°C or higher to form and fix a water-insoluble Cr compound in and on the fiber.

*CASEIN FIBERS.* Arthur Lyem (to Camille Dreyfus). Can. P. 425 516, Feb. 6. Casein fiber or yarn is weighted with tin by immersion in a solution of $SnCl_4$ (20-35°Be) and then fixing the metal in the fibers.

### I, 4. Synthetic

*MELT SPINNING.* Elmer T. Weibel (to Irvington Varnish & Insulator Co.). USP 2 369 506, Feb. 13. Filaments are drawn from a melt of an organic substance in apparatus which maintains the main supply of the feed materials below its melting point but allows the powder to flow into the melting pot at a suitable rate for continuous replacement of the amount drawn off.

### I, 4a. Nylon type

*LINEAR POLYMERS.* Maurice L. Huggins, Eastman Kodak Co. *J. Chem. Physics 13,* 37-42 (Jan. 1945). So-called fibrous sulfur has some structural similarity to stretched linear polymers such as those of polyethene, polyisobutene, vinyl and vinylidene resins and the like. Stretched nylon presents a more complicated structure; so does stretched rubber, natural or synthetic.

### I, 4b. Vinyl and vinylidene polymers and copolymers

*SYNTHETIC YARN.* Karl Heymann (to Am. Viscose Corp.). USP 2 369 395, Feb. 13. Yarn is made of crimped polyvinyl resin filaments, the degree of crimping increasing progressively from the periphery to the center of the yarn.

### I, 5. Applications as fibers (not in yarns or fabrics)

*BOTTLE CAP.* George Schneider and Mervin E. Martin (to Camille Dreyfus). Can. P. 425 517, Feb. 6. A cushion liner for bottle caps is formed from cellulose fiber containing 15-50 wt.-% of a hygroscopic agent such as glycerol, and faced with a performed cellulose acetate foil.

### I, 5a. Insulation

*HEATING INSULATION.* Warren C. Ma-

gill (to Sears, Roebuck & Co.). USP 2 370 365, Feb. 27. A mixed fiber insulating batt contains 75-80% by volume of oriental kinky staple cotton fiber and 7-12% each of wool and silk. The cotton provides dead air spaces; wool acts as a binder and imparts resilience, and silk imparts luster and heat-reflecting capacity.

## II. INORGANIC FIBERS

### II, 2. Artificial

*GLASS FIBER.* Piero Modigliani (to Owens-Corning Fiberglas Corp.). USP 2 369 481, Feb. 13. In making spun glass fiber a device is employed which accumulates a mat of cross fibers, then pneumatically stretches the mat into a tubular strand which is treated and wound on a bobbin.

*MINERAL FELT.* Harold T. Coss, Joseph H. Zettel and Louis A. Hawthorne (to Johns-Manville Corp.) Can. P. 425 329, Jan. 30. A mixture of mineral wool fiber and 10-30 wt.% of a thermoplastic resinous binder is formed into an air suspension and then into a felt which is heated and then cooled under pressure to set the binder and form a strong compact felt.

*MINERAL FELT.* Harold T. Coss, William M. MacAlpine and Louis A. Hawthorne (to Johns-Manville Corp.). Can. P. 425 330, Jan. 30. A mixture of mineral wool and a thermoplastic binder is deposited to form a uniformly thick felt, heated to soften the binder, compressed and cooled to set the binder, then heated on the surface and compressed while cooling to form the finished felt.

*MINERAL FELT.* Harold T. Coss (to Johns-Manville Corp.). Can. P. 425 331, Jan. 30. A resinous binder used in felting mineral wool contains 3-30% of asphalt and 2-25% of a lignin-furfural resin, both calculated on the weight of felt. The product is used as an insulating material in blanket or batt form.

*MINERAL FIBER MAT.* Howard W. Collins (to Fiberglas Canada Ltd.). Can. P. 425 441, Feb. 6. Dense glass fiber mats are made by blowing hot air through a loose mat of the long fine fibers till they are heated near but below the softening point. A second air jet is then blown through the mat in the opposite direction until the fibers are heated to the softening temperature and the mat is compressed to the desired thickness while hot.

*COATED GLASS FIBERS.* Robert W. Auxier (to Can. Westinghouse Co., Ltd.). Can. P. 425 665, Feb. 20. A thermosetting phenol-aldehyde resin is bonded to continuous filament glass fibers with an oil modified phenol-aldehyde resin. High strength is achieved in this way by providing for distribution of stresses under load.

### II, 3a. Insulation (heat, sound or electric)

*AIRCRAFT LINING.* Anon. *Plastics, 2,* No. 2, 46 (Feb. 1945). Resin-bonded fiber glass provides fireproof, soundproof, light weight linings for aircraft interiors. The heat insulating effect of these liners permits the use of smaller heaters in high altitude aircraft and reduces fatigue of the crew by diminishing the noise. The lining is made up from glass fiber about 0.1 mil in diameter combined with a very light interior cloth and a thin sheet of cellophane.

---

*INSULATED WIRE.* John J. Keyes (to Westinghouse Electric & Mfg. Co.). USP 2 370 046, Feb. 20. A layer of glass fiber sliver is bonded to an electric wire by means of a resin layer and is given a smooth finish without projecting fibers by application of a blended resin containing an oil-modified alkyd, a phenol-formaldehyde resin and a hydrolyzed polyvinyl ester.

---

INSULATION ELECTRICAL GLASS FIBER UNTREATED (GROUP GFU). Joint Army-Navy Specification 17-I-31a (supersedes 17-I-31). Bureau of Supplies & Accounts, U. S. Navy, Washington, 1944; 17 pp; gratis.

## III. NONFIBROUS MATERIALS

### III, 1. Plastics, resins, rubber

*PLASTICIZERS.* Elizabeth M. Frith and R. F. Tuckett, Univ. of Cambridge. *Nature 155,* 164-6 (Feb. 10, 1945). The efficiency of plasticizers depends largely on molecular size and shape, but the thermodynamic relations of solvent and non-solvent plasticizers to plastics merit attention even though not directly concerned with efficiency. Compatibility between polymer and plasticizer depends in part on the thermodynamic properties of the system.

*PLASTICS.* C. Rector, Catalin Corp. *Chem. Eng. News 23,* 150-2 (Jan. 25, 1945). One of the outstanding advances in plastics in 1944 is a process for continuous lamination of thermosetting resins, with consequent new applications. Several other new processes were brought out during the year, along with a variety of new products.

*BY-PRODUCT LIGNIN.* J. Seiberlich, New Hampshire Eng. Expt. Station. *Chem. Industries 56,* No. 1, 53 (Jan. 1945). In the Eugene (Oregon) plant for saccharifying wood and making alcohol from the sugar there will be 10 lb. of by-product lignin for every gallon of alcohol. Two methods of recovery for use in plastics are suggested, one by treatment with $ZnSO_4$ (or ZnO) and the other by condensation with $C_2H_4Cl_2$ and a polysulfide.

---

*SCREENS.* Harry W. Thomas. USP 2 368 689, Feb. 6. An open mesh screen is made of monofils both in warp and weft, each monofil being a metal wire coated with a comparatively thick layer

of synthetic resin. Each wire is crimped and the screen is resilient at the crimps.

*BOTTLE CAP.* Roger N. Wallach (to Sylvania Industrial Corp.). Can. P. 425 359, Jan. 30. A sealing gasket for bottle caps contains artificial hydrophilic fibers which swell in the liquid contained in the bottle. These fibers are mixed with nonswelling fibers acting as a binder and are covered with a film which is permeable to the vapor but not to the liquid in the bottle.

*WRAPPER.* Frank H. Reichel & Ralph T. K. Cornwell (to Sylvania Industrial Corp.). Can. P. 425 485, Feb. 6. A nonadhering flexible wrapper for frozen foods is made of a nonfibrous hydrophilic colloid plasticized with aqueous glycerol and diethyleneglycol.

---

PLASTICIZERS. Form 5882, Carbide & Carbon Chemicals Corp., New York City, 1944; 15 pp.
Reviewed in *Chem. & Eng. News 23,* 305 (Feb. 10, 1945).

### III, 1a. Cellulose derivatives

*NITROCELLULOSE.* Linton C. Amberson. USP 2 369 200, Feb. 13. Flammable nitrocellulose dope is rendered nonflammable when dry by stirring with aqueous $ZnCl_2$ strongly acidified with HCl, allowing the mixture to settle and drawing off the layer of dope.

*ETHYLCELLULOSE.* Neil E. Tillotson. USP 2 369 379, Feb. 13. Ethylcellulose is compounded with cativo resin or copaiba resin.

*CELLULOSE OXYCHLORIDE.* John A. Roux (to Rouxite Co.). USP 2 369 411, Feb. 13. Cellulose oxychloride is made from a cellulose with high alpha content by treatment with alkali and then with hypochlorite at room temperature.

*FOIL.* Gale F. Nadeau (to Eastman Kodak Co.). USP 2 369 484, Feb. 13. Foils are made by flowing a cellulose derivative solution through a discharge slot onto a casting surface in presence of solvent vapor under conditions which favor formation of a condensate from the vapor.

*FOILS.* Donald H. Jacobs (to Celanese Corp. of Am.). USP 2 370 244, Feb. 27. Cellulose ester films and foils are rendered opaque to ultraviolet light by incorporating therein a colorless acid salt of a quinine base.

*CELLULOSE ESTER SHEETING.* Howard A. Tanner (to Eastman Kodak Co.). USP 2 370 332, Feb. 27. Sheets of cellulose mixed esters are prepared from a solution of the ester and a plasticizer containing sufficient of a K or Na soap to impart a final soap content of 0.1 to 0.2%. The ester is pretreated with an aqueous solution containing salts of Ca, Cu, Mg, Zn or Al so that the soap in the sheeting is water-insoluble.



*CELLULOSE ETHERS.* Shailer L. Bass, Richard M. Upright & Firth L. Dennett (to Dow Chemical Co.). USP 2 370 517, Feb. 27. Water-soluble cellulose ethers are insolublized by addition of a water-soluble hardenable melamine-aldehyde resin modified with a polyhydric alcohol. The solution thus treated is evaporated to dryness and baked at 90-170°C.

*SHATTERPROOF PLASTIC.* Bjorn Anderson and Ernest Schweizer (to Camille Dreyfus). Can. P. 425 755, Feb. 20. Sheet material with high resistance to shattering by bullets is made by floating a wire fabric on a layer of soft plasticized cellulose acetate and laminating this layer to a layer of harder plasticized cellulose acetate.

---

MEDIUM, PHOTOGRAPHIC MASKING (RED CELLULOSE NITRATE BASE). U. S. Army Specification 75-464 (supersedes 31034-A). Wright Field, Dayton Ohio, 1944; 3 pp.; gratis.

### III, 1b. Polymer resins; natural resins

*VITAFILM.* Anon. *Fiber & Fabric 98,* No. 3134, 11 (Feb. 24, 1945). Vitafilm is a polyvinyl chloride derivative which has many possibilities in thin to heavy sheeting or foil, in heat sealed or stitched umbrellas and raincoats, and in woven fabrics.

*VELON.* Anon. *Rev. Sci. Instruments 16,* 19 (Jan. 1945). Velon film can be made in foils as thin as 3 mils, or in thick slabs; it can also be sprayed on textiles. Veloflex, a leather substitute, can be sewed or heat-sealed and readily takes a fabric backing. Both are made by Firestone Industrial Products Company.

*VINYL POLYMERIZATION.* R. R. Smith, Distillers Co. *Chemistry and Industry 1945,* 14 (Jan. 13). Formation of vinyl resins by thermal and catalytic polymerization is probably a free radical chain reaction, with initial active centers which are peroxide fragments in the catalytic and biradicals in the thermal method. Probably transfer reactions become influential only at high temperatures or in presence of unusual solvents such as acetaldehyde.

---

*CASTING FOILS.* Barnard M. Marks & Clayton E. Ranck (to E. I. du Pont de Nemours & Co.). USP 2 369 593, Feb. 13. Cast sheets are formed from a heat-polymerizable liquid in cells composed of 2 plates separated by a compressible gasket.

### III, 1c. Condensation polymer resins

*WIRE COATINGS.* Anon. *J. Sci. Instruments 21,* 166 (Sept. 1944). Under the name "Bicolon" a line of coated winding wires is produced by British Industrial Cables, Ltd. The coating is a modified nylon with exceptional toughness,

flexibility, abrasion resistance and chemical stability. The chief use is for Class A insulation in resin-impregnated coils.

---

*SHAPED ARTICLES.* Eugene L. Perry (to Universal Winding Co.). USP 2 369 488, Feb. 13. Hollow articles are made from thick walled hollow blanks formed from a fibrous pulp and a themosetting binder by shaping the blank on a hollow former with perforated wall, compacting and shaping the blank, then drying it and setting the binder.

---

PLASTIC MATERIALS, LAMINATED THERMOSETTING SHEETS AND PLATES. Joint Army-Navy Specification JAN-P-13. Bureau of Supplies & Accounts, U. S. Navy, Washington 1944; 79 pp.; gratis.

PLASTIC MATERIALS, MOLDED THERMOSETTINGS. Joint Army-Navy Specification JAN-P-14, Bureau of Supplies and Accounts, U. S. Navy, Washington, 1944; 80 pp.; gratis.

LAC DERIVATIVES AS SUBSTITUTES FOR ALKYD RESINS. B. S. Gidvani and N. R. Kamath. London Shellac Research Bureau, 1944; 8 pp.
Cited in *Nature 155,* 186 (Feb. 10, 1945).

### III, 2. Adhesives; gums; starches

*CARBOWAX.* C. P. McClelland and R. L. Batemen, Carbide and Carbon Chemicals Corp. *Chem. & Eng. News 23,* 247-51 (Feb. 10, 1945). The Carbowax compounds are solid polyethylene glycols ranging in molecular weight from about 1000 to 7000; liquid polyethylene glycols range from about 200 to 1000. Various diagrams and curves for molecular weight distribution, freezing point range, viscosity and hygroscopicity are shown. Solubilities in organic solvents and compatibility with cellulose derivatives, synthetic resins, natural waxes and a variety of oils and sizes are tabulated. The various Carbowax products are useful as plasticizers for cellulose acetate; coatings to eliminate static on belting and plastic sheeting; leather dressings; textile assistants and finishing agents; softeners for wool, canvas and cotton; levelling agents in dyeing fur; greaseproofing agents for waxed paper and container liners; and transparentizing agents for tracing paper or cloth.

---

*ADHESIVES.* Malcolm C. Moore (to Hercules Powder Co.). USP 2 368 767, Feb. 6. Adhesives made of water-soluble starch or protein, or of alkali-soluble protein, are plasticized with a polymerized terpene.

*TEXTILE FINISH.* Alfred L. Rummelsburg (to Hercules Powder Co.). USP 2 368 782, Feb. 6. The binder in a textile finishing composition is starch modified with a polymerized terpene resin.

---

EXTENDING PHENOLIC RESIN PLYWOOD GLUE WITH CORN GLUTEN AND SOYBEAN MEAL (WITH BIBLIOGRAPHY). Glen E. Babcock and Allen K. Smith. AIC-65, Northern Regional Research Laboratory, USDA, Peoria 1944; 6 pp.; gratis.



### III, 3. Surface active compounds; textile assistants

*DETERGENTS.* C. Dunbar, Imperial Chemical Industries. *Chemistry & Industry 1945,* 13-4 (Jan. 13). Wetting a surface is a much simpler process than detergency; hence an effective wetting agent is not necessarily a good detergent. Dirt removal depends on 2 wettability factors (the dirt surface and the textile surface); ability to reduce interfacial tension between oil and aqueous phases; viscosity of detergent solution, and the physical state of the system. The relative importance of these factors is not clearly defined. Fixanol C, Velan PF, Lissolamine A and Safamine KW are long chain quaternary compounds. In their analysis the effect on surface tension can be used to detect the end point of a titration. This has been done in showing that Lissapol C Paste has more affinity for wool than for cotton under scouring conditions.

## IV. FIBER TO YARN

### IV, 1. Preparation for spinning

*BOBBIN DRIVES.* S. L. Gerhard, Textile Div., U. S. Rubber Co. *J. Applied Physics 16,* 26-31 (Jan. 1945). The kinematic deviation from theoretically ideal motion in bobbin drives on roving frames is a factor in uniformity of rovings which can be used to predict variations. Tests revealed as much variation in roving size on the same bobbin as from one bobbin to another and from one height to another on the bobbins. There was no perceptible difference from one layer to the next (carriage rising and carriage falling).

*SLIVER SIZE.* C. H. Plummer, Chicopee Mfg. Corp. *Textile Research 14,* 370-2 (Nov. 1944.) Periodic stripping of the wire on doffer and main cylinder in cotton cards results in producing a light sliver for a short period of time. The Saco-Lowell Sliver Tester has been used to measure this effect and determine the time required for the card to return to normal operation.

*CARD GRINDING.* Jack Roy, B. S. Roy & Son Co. *Textile Bull. 67,* No. 11, 35 (Feb. 1, 1945). Suggestions are offered for the care of card grinding equipment such as breaking in new grinders, and adjusting speed and length of grinding according to the kind of differential employed on the grinder.

---

*CRIMPING FIBER.* Alexander Bruenner & Alvin Lodge (to Am. Viscose Corp.). USP 2 368 637, Feb. 6. Textile fibers are crimped by passing them between 2 closely spaced flexible belts which

exert a shrinking force on the fiber by alternate tightening and slackening of the belt.

*HANDLING LAP.* Frank L. Crockett (to Whitin Machine Works). USP 2 368 971, Feb. 6. A fixed selvage guide on the lap supporting roll of a textile machine is flush with the top surface at the end of the roller and has a lap-engaging surface with a downward slope along the upper front face of the roll.

*CARD.* Eugene C. Gwaltney (to Saco-Lowell Shops). USP 2 369 893, Feb. 20. A cotton card has a metal screen plate near the bottom of the card cylinder. The size and arrangements of the perforations are such that linters pass readily through the plates but longer fibers do not. The plate is smoothly coated on both sides with electrical insulating material so that a static charge is induced in the plate and the resulting electrical condenser effect assists in removing linters.

*CARDS.* John Locke (to British Cotton Industry Research Assoc'n). Can. P. 425 542, Feb. 13. Improved cleaning at the intake region of a card is produced by a control device which partially encloses the face below the striking face and provides for deflecting certain particles from the striking face through a suitably arranged gap into the intake dirt box.

### IV, 2. Spinning, doubling, twisting, winding

*THREAD GUIDE.* Hans Thurnauer (to Am. Lava Corp.). USP 2 369 266, Feb. 13. A conducting ceramic thread guide is made of a vitrified mixture of $TiO_2$ and a metal oxide. The resistivity is not above 1 megohm/cc.

*SPINNING ROLLS.* Henry M. Bacon (to Dayton Rubber Mfg. Co.). USP 2 369 635, Feb. 20. A cot for worsted type spinning rolls has an inner compression layer of rubber composition, a strength layer of parallel cards of nonstretching material and an outer cot forming a smooth fiber-working surface of rubber composition harder than the compression layer.

*DRAFTING.* Samuel R. Walsh & George E. Repass (to H. & B. American Machine Co.). USP 2 370 598, Feb. 27. A cradle for a long draft spinning frame is actuated by a device having a geometric shape and is formed of 2 side plates united at the front by a cross bar serving as a guide for an endless belt.

### IV, 2a. Cotton; vegetable fibers

*NEW SPINNING METHODS.* Anon. *Am. Wool & Cotton Reptr. 59,* No. 2, 41-2 (Jan. 11, 1945). A note concerning the present status of a new development in spinning with the aid of compressed air in the General Electric Co. laboratories. The method has not yet been developed to a commercial stage and work has been delayed by war conditions but development work will be continued when circumstances permit.



*SPINNING FLAX.* Sven T. M. Svenzon. Can. P. 425 406, Feb. 6. A roving of both long and short flax fibers is built up on moving frame bobbins made of a chemically resistant material and the bobbins full of roving are then treated with a hot solvent for pectin to loosen the fibers and favor uniform drafting on the wet spinning frame.

### IV, 2d. Rayon

*PROCESSING RAYON.* Anon. *Traveler* No. 110, 8-13 (Jan. 1945). In processing 3 denier rayon (1.5″ staple) on the cotton system it must be remembered that the density of 3 denier rayon is much greater than that of cotton or even of 1.5 denier rayon. Proper settings must be maintained between speed roll and beater and between beater and cutoff plates because of the long staple. The Kirschner beater permits closer setting because of its combing action. A processing layout is shown for 3 denier viscose, 1.5″ staple; it has proved satisfactory in normal mill operation.

*RAYON.* Gilbert I. Thurmond (to Am. Enka Corp.). USP 2 369 190-1, Feb. 13. Viscose yarn with low elongation and high tenacity, suitable for reinforcing rubber articles such as tires, is produced in apparatus which delivers the filaments from the spinneret to a coagulating bath then to a wash and to a collecting device. Two sets of stretching rolls (1 inside the washing bath) aid in imparting high tenacity while low elongation is obtained by drying under tension.

*ACETATE RAYON.* William J. Simpson (to Henry Dreyfus). Can. P. 425 373, Jan. 30. Cellulose yarns regenerated from acetate rayon by hydrolysis of the stretched yarn are treated with strong caustic which is then immediately neutralized and washed out of the yarn.

### IV, 2e. Winding

*WINDING FRAME.* Wilhelm and Walter Reiners, Gustav Kahlisch and Stefan Fürst. USP 2 369 606, Feb. 13 (vested in the Alien Property Custodian). A winding frame has a rotary cop support formed with a spindle and tailstock both of which can shift axially, the spindle being slidable away from the tailstock.

*SPOOL TRANSFER.* Walter Siegenthaler (to Maschinenfabrik Schärer). Can. P. 425 338, Jan. 30. A spool transfer device for winding machines has a clamp carried on a reciprocating slide, serving for automatic removal of full spools from their position on the machine.

*COP WINDER.* Walter Siegenthaler (to Maschinenfabrik Schärer). Can. P. 425, 461, Feb. 6. A cop winder has a device for producing a thread

reserve on spools to be wound, a thread guide and a winder feeler independent of the thread guide for intermittently advancing the guide along the carrier rod as winding of the spool progresses.

*YARN WINDER.* Charles D. Reynolds, Gustaf S. Beckman & Herman A. Moe (to Universal Winding Co.). Can. P. 425 594, Feb. 13. An automatic yarn winding machine has a yarn carrier mounted on a spindle. A doffing and donning device is controlled in a time sequence for picking off full carriers and putting on empty carriers.

*WINDING.* Howard W. Doughty, Jr. (to Foster Machine Co.). Can. P. 425 690, Feb. 20. A yarn winder has a pivoted lever carrying a yarn engaging member which is moved as yarn tension changes and actuates a quick-action snap switch. The range in which this switch responds to changes in yarn tension can be varied.

*YARN CONTROL.* Elmer R. Stahl and William T. Stearn (to Camille Dreyfus). Can. P. 425 754, Feb. 20. A control device for yarn winding machines has the traverse frame assembly connected to a gear train in such a way that the traverse frame recedes from the yarn package spindle as the thickness of the yarn package increases.

### IV, 3. Processing and finishing

*CONDITIONING YARN.* David Marinsky & Louis H. Morin. USP 2 369 155 and 2 369 592, Feb. 13. Thread which is cross-wound on a cord without retaining discs is held in position against displacement or unwinding by treatment with a liquid medium, removing the surplus centrifugally by revolving the bobbin at high speed, then drying the liquid to provide adhesion at contact points. The centrifugal force may also be applied to a number of bobbins at once in an open work centrifugal basket.

*TREATING YARN.* Ernest K. Bauer (to Am. Viscose Corp.). USP 2 369 769, Feb. 20. Apparatus for liquid treatment of yarn in motion includes a series of thin plates, notched at the end and having the lengthwise edges bent slightly upward. These plates are piled so that the spaces between them form paths for capillary travel of the liquid to the yarn.

*YARN FEED.* Robert D. McCrosky (to E. I. du Pont de Nemours & Co.). USP 2 370 180, Feb. 27. A yarn forwarding device has a feed wheel the feeding surfaces of which are progressively larger from front to rear, and a guide roll which guides the yarn from one feed surface to the next.

### IV, 4. Products (thread, yarn, cord, etc.)

*TIRE CORD.* Anon. *Rayon Textile Monthly 26,* 11 (Jan. 1945). The new U. S. Rubber Co. tire cord plant at Scottsville, Va., has windowless



factory buildings, laid out for straight line production. Electric conveyors handle the 1000-lb. beams. Owing to this and other advances in mechanization about 90% of the factory workers are women.

*TIRE CORD.* Howard J. Philipp and Carl M. Conrad, Southern Regional Research Laboratory, USDA. *J. Applied Physics 16,* 32-40 (Jan. 1945). All of a variety of stretching treatments at various tensions, temperatures and moisture content levels increased the strength but reduced the gage and elongation of tire cord. The greatest increase in strength was given by hot stretching after swelling the cord. No single stretch treatment permitted control of elongation, but a dual stretch treatment was found which permits elongation to be controlled independently of the strength increase.

---

*TAPERED FIBERS.* Joseph A. Truitt (to Am. Viscose Corp.). USP 2 370 112, Feb. 20. Yarn is made from tapered synthetic fibers having their direction of taper opposed heterogeneously. Most of the fibers have a single continuous taper throughout their length.

*TIRE CASING.* Earl S. Ebers (to U. S. Rubber Co.). Can. P. 425 735, Feb. 20. Benzylpyridinium chloride is used as an agent for bonding vulcanized rubber to cotton fabrics in tire carcasses. The bonding agent may also be trimethylbenzylammonium hydroxide.

### IV, 5. Applications as yarn

### IV, 5a. Coated or Impregnated products

*COTTON BATTNG.* Earl K. Fischer, Interchemical Corp. *Textile Research 14,* 333-42 (Oct. 1944). Experimental results which are significant as aids toward control of continuous processing have been obtained in treating cotton batting with rubber latex. The tests revealed that the main controlling factors are the nonvolatile content of the bath, the wetting time and the squeeze roll pressure.

### IV, 5b. Laminates

*TRIM PANEL.* Earl A. Burns (to Woodall Industries Inc.). USP 2 369 658, Feb. 20. Trim panels are made by laminating wadding to a base layer and impregnating the wadding in the area of a selected pattern with an uncured thermosetting resin to which is then applied a decorative surface veneer which is bonded to wadding and base layers by curing the resin.

## V. YARN TO FABRIC

*NEW PRODUCTS.* Anon. *Chem. & Eng. News 23,* 190, 192, 201, 289 (Jan. 25 & Feb. 10, 1945). Recent developments include a fiber glass conveyor belt rubberized with neoprene; light weight blanket from Santocel; Ardil, the new artificial wool from peanuts; molded fiber protective

caps for workmen; and a rayon voile coated with vinyl resin which provides a high degree of warmth rarely found in a sheer fabric.

### V, I. Preparation

*TREATING THREAD.* Charles F. Dulken & Herbert E. Kresse. USP 2 368 648, Feb. 6. A device for moistening yarns by contact with the wet bristles of a brush has a control device for moving the brush away from the yarn in case of breakage.

### V, 3. Weaving

### V, 3a. Looms

*TEXTILE MACHINERY.* Henry Miedendorp, Jr. *Rayon Textile Monthly 26,* 37-8 (Jan. 1945). Advances in loom design have not kept pace with advances in textile finishing machinery. Postwar improvements will be benefited by experience in making high precision ordnance and other military equipment.

*LOOM PROGRESS.* Albert Palmer, Crompton and Knowles Loom Works. *Rayon Textile Monthly 26,* 39-42 (Jan. 1945). Adoption of textile machine improvements is economically justifiable only if there is an improvement in speed, continuity, labor efficiency, economy, quality of product or in the appearance or utility of the machine. Magnesium has desirable properties but also has drawbacks for use in looms. This statement also applies to plastics.

### V, 3b. Loom parts

*TEXTILE ACCESSORIES.* Ernest Briggs, Jones Textilaties, Ltd. *Textile Weekly 93,* 80; discussion 82 (Jan. 12, 1945). There have been many improvements in shuttles, weft packages and other loom parts. One of the outstanding advances is the expanding comb which spaces out the thread in an even yarn sheet.

---

*YARN GUIDE.* Ernest Forgea. USP 2 368 820, Feb. 6. A yarn guiding attachment for the bobbin magazine of a loom is formed of parallel wires united at their lower end and separated at their upper end.

*WARP TYING.* Charles B. Crandall (to Barber-Colman Co.). USP 2 369 536, Feb. 13. A warp tying machine has a knotter, a thread selector and a reciprocating slide to present selected threads to the knotter. The slide is arranged to stop automatically when a thread breaks.

*LOOP PICKERS.* Henry M. Bacon (to Dayton Rubber Mfg. Co.). USP 2 369 636, Feb. 20. Loop pickers are molded to form a hard resilient wear-resistant picker stick by building up the body from a synthetic rubber bonded laminated fabric, applying the body to a core to form a picker stick



hole of the desired size and molding the resulting pickers in pairs.

*YARN GUIDE.* Lynn K. Spangler (to Am. Viscose Corp.). USP 2 369 809, Feb. 20. A yarn guide is open at one side and provides 2 surfaces each having a long constant slope at the approach side of the guide, merging into a gentle curve at the mouth of the guide.

*LETOFF MECHANISM.* Saint Julian Geddings. USP 2 369 889, Feb. 20. A letoff mechanism is mounted on a loom frame and is controlled by the tension of the warp and the diameter of the yarn on the warp beam. The letoff mechanism turns a driving pinion geared to the beam gear.

*WARP REGULATOR.* John K. Dudley. USP 2 370 022, Feb. 20. A warp regulating device has a floating roll spaced between and below a pair of freely rotating rolls and a device for passing the floating roll upward into firmer contact with the 2 rotating rolls. The warp passes between the floating roll and the pair of rotating rolls.

*WARP BEAM.* Robert V. Olson (to Mossberg Pressed Steel Corp.). USP 2 370 066, Feb. 20. A section warp beam, spool or reel has a metal tube for its barrel and the central shaft joining the 2 heads to the tube is supported by welded braces at intervals inside the tube.

*BOBBIN TRANSFER.* Ernest P. Guerin (to Crompton & Knowles Loom Works). Can. P. 425 307, Jan. 30. A selector control mechanism for the bobbin transfer on a weft replenishing loom includes a device which moves and returns each time a replenishing operation of the loom is called, whether or not it is completed, and a stack selector which registers singly with the releasers. Energy for positioning the selector is provided by the return stroke.

*LOOM TAKE-UP.* William F. Astley (to Union Asbestos & Rubber Co.). Can. P. 425 363-4, Jan. 30. A take-up mechanism on a loom for weaving insulating tape in tubular form is adapted to engage only the short warp side of the woven tubular sheet with one part of the device while another part engages the superimposed long warp side so that the 2 sides are advanced at corresponding rates of speed according to their relative lengths.

### V, 3c. Control devices; stop motion; bobbin selectors

*STOP MOTION.* Gustave A. Geeraert. USP 2 368 707, Feb. 6. An actuating circuit closer for looms having both a filling stop motion and an electric warp stop motion is connected with the solenoid of the warp stop motion so that if the dagger does not actuate the filling stop motion it will actuate the warp stop motion.

*STOP MOTION.* Jacob Neubäuer. USP 2

369 844, Feb. 20. Looms in which the harness frames operate in pairs have a stop motion so arranged that when the frames of a pair separate the driving connection to the frame is released.

### V, 3e. Defects

*DEFECTS.* H. E. Wenrich. *Rayon Textile Monthly 26,* 33-4 (Jan. 1945). Directions, illustrated with photographs, are given for detecting and grading defects in woven fabrics due to broken picks.

### V, 4. Knitting

*POSTWAR HOSIERY.* Anon. *Rayon Textile Monthly 26,* 35-6 (Jan. 1945). The Nat'l Assoc'n of Hosiery Mfrs., through its committee on postwar planning, has made recommendations concerning use of cotton, rayon and nylon yarns, and elastic yarns made with natural or synthetic rubber, in postwar production.

*KNITTING MACHINE.* Anon. *Southern Knitter 9,* No. 1, 61 (Jan. 1945). News notes concerning a new all British machine which is reported to be capable of knitting at twice the rate of present machines and yet producing runproof rayon fabric of the highest quality.

*KNITTING MACHINE.* T. Max Champion, *Cotton 109,* No. 2, 159-61 (Feb. 1945). An installation of Swiss clock machines at the Crescent Knitting Co., Statesville, N. C., is described and illustrated. These machines offer one of several ways for decorating men's socks. Since the yarns in the clock are superimposed on the ground yarn of the hose the design stands out from the surface.

*HOSIERY CONSTRUCTION.* J. C. Cobert, Fidelity-Rolande Uniform Hosiery Control System. *Southern Knitter 9,* No. 2, 20, 23, 57 (Feb. 1945). A simplified method is described and illustrated for planning the construction of hosiery toes in which the last narrowings are in line with the looped corners yet permit a two-needle overlap of selvages at the center of the toe pocket.

*REVERSE PLATING.* Julian W. Hughes. *Southern Knitter 9,* No. 2, 30, 32, 56-7 (Feb. 1945). Reverse plating of two yarns of contrasting colors to produce fancy designs on half hose has been known for probably 50 years but became popular only about 20 years ago. The two principal methods known as sinker reverse plating and needle reverse plating are compared.

*KNITTING MACHINE.* Paul Kroener, Textile Machine Works. *Southern Knitter 9,* No. 2, 26, 29 (Feb. 1945). Probable postwar trends in full fashioned knitting machinery are discussed in the light of past conditions and the present state of the art.

---

*INSULATED WIRE.* Robert H. Sperzel (to Whitney Blake Co.). USP 2 368 686, Feb. 6. A machine for knitting a fabric covering on insulated wire or cable has a stop motion device in which a feeler mounted on a pivot operates a control switch when it strikes a defect in the knit covering.



*KNITTING.* Arthur N. Cloutier (to Hemphill Co.). USP 2 369 774, Feb. 20. Inturned welts are knit on a circular knitting machine having independent needles by feeding yarn only through selected needles and over the point of transfer bit, knitting fabric on all needles over the entire inturned welt range and then transferring the loops on transfer bits to the same needles to which yarn was originally fed.

*STITCH REGULATOR.* Oscar Fregeolle (to Hemphill Co.). USP 2 369 780, Feb. 20. A stitch control device for a circular knitting machine having independent needles operates by controlling the working height of the main and auxiliary cam blocks which are mounted on a vertical slide.

*CAM MOUNT.* Isaac H. C. Green & Eugene St. Pierre (to Hemphill Co.). USP 2 369 781, Feb. 20. The cam which draws stitches during rotary and reciprocating knitting on a circular knitting machine are mounted on an adjustable cam block carried on a pivoted support.

*KNIT TUBING.* Paul L. Thurston & David Nagley (to Interwoven Stocking Co.). USP 2 369 927-8, Feb 20. Knit tubing is made with plain and rib loops of body yarn and an elastic thread forming a pattern arrangement on the face of the fabric. Knit tubing is also made with inwardly and outwardly facing stitches, alternately arranged in groups around the fabric with spaced courses of thread knit at every wale while the intervening courses have the thread knit at inwardly facing stitches and floated behind intervening outwardly facing stitches.

*KNITTING MACHINE.* Edgar W. Clarke (to Interwoven Stocking Co.). USP 2 370 449, Feb. 27. A circular knitting machine has upper and lower coaxial needle cylinders arranged so that consecutive needles in the lower cylinder draw loops of thread from a feed device while the upper cylinder assists in forming sinker loops of the thread.

*KNITTING MACHINE.* Harry W. and Ernest Start (to George Blackburn & Sons, Ltd.). USP 2 370 501, Feb. 27. The reciprocating parts of a straight bar knitting machine are driven by 2 endless chains in parallel planes; the drive is placed between the chains and carried by them.

*KNITTING MACHINE.* Harold E. Houseman (to Scott & Williams, Inc.). Can. P. 425 348-9, Jan. 30. Stockings are knit on a machine of the superposed cylinder type by a method in which certain needles are transferred from one cylinder to the other during the knitting operation, to alter the type of stitches. A suture is formed in

this way after which the needles are returned to the first cylinder.

### V, 5. Pile fabrics, laces, embroideries, netting

*WOOL RUG.* James D. MacMahon (to Mathieson Alkali Works, Inc.). USP 2 369 398, Feb. 13. Sheen is imparted to the pile of wool rugs by treatment in an alkaline bath and then in a hypochlorite solution which is not sufficiently concentrated to have a bleaching or tendering effect.

*WOOL RUGS.* James D. MacMahon & Lorenzo D. Taylor (to Mathieson Alkali Works, Inc.). USP 2 369 399, Feb. 13. Sheen is imparted to the pile of wool rugs by treatment in an alkaline peroxide bath.

*PILE FABRIC.* William I. Taylor & James F. Levers (to Henry Dreyfus). Can. P. 425 601-2, Feb. 13. Pile fabrics in imitation of animal pelts are produced by forming the pile from flat filaments of a cellulose derivative, crinkling the pile in boiling water and then treating the fabric with an aqueous solution of a long chain pyridinium compound. Effect fabrics of this kind are made windproof and waterproof by impregnating the backing with a synthetic rubber composition.

### V, 6. Mechanical processing

*TEARING FABRIC.* Maynard W. Higby. USP 2 370 465, Feb. 27. A machine for tearing full width woven fabric crosswise has a spear point which makes a short cut between 2 holders in the middle of the fabric, after which the holders tear the fabric from the middle to the edges.

*SHRINKING RAYON.* Cyril M. Croft & Walter H. Hindle (to Camille Dreyfus). Can. P. 425 254, Jan. 30. Fabric made of regenerated cellulose formed by hydrolysis of acetate rayon is shrunk onto a frame by wetting the fabric with concentrated aqueous NaOH, KOH or $ZnCl_2$ washing out the solution, applying the fabric to the frame while wet and allowing it to dry.

*FULLING MILL.* Warren J. Simonds (to Rodney Hunt Machine Co.). Can. P. 425 478, Feb. 6. A fulling mill has a pair of fulling rolls from which cloth passes through a packing box the sides of which extend past the rolls.

### V, 7. Products; design; construction

*WOOL BLENDS.* Anon. *Am. Wool & Cotton Reptr. 59,* No. 8, 13-14 (Feb. 22, 1945). A good shetland for piece dyeing is composed of 15% each dyed staple rayon and fine machined cotton roving, the other 70% being made up of very fine worsted clips. The fibers must be well blended before carding and particular care is needed in fulling and washing to obtain the correct felting and shrinkage before passing the fabric through the dye bath.



*CHECK FABRIC.* Anon. *Am. Wool & Cotton Reptr. 59,* No. 9, 11-12, 25 (March 1, 1945). A desirable contrasting check effect is obtained by weaving a hard twist two-ply 75 denier viscose yarn for the open work effect and a soft twist 120 denier acetate yarn for the denser portion of the cloth. Shrinkage calculations are particularly important for this weave.

---

*AIR FORCE PROBLEMS.* Anon. *Chem. Eng. News 23,* 80 (Jan. 10, 1945). The third list of problems published by the Army Air Forces (through the Nat'l Inventors Council, Dept. of Commerce, Washington 25) calls for suggestions or solutions for 34 problems. Some relate to textiles, e. g. improved parachute packs and harness; low-cost delivery parachutes; redesigned parachute canopy; a stable parachute; a tow target; tester for heating elements in electrically heated flying jackets, trousers, gloves and shoes; and thermostats for control of electric heat in flying gloves and shoes.

*BLENDING FIBERS.* Editorial. *Fiber & Fabric 98,* No. 3134, 5, 15 (Feb. 24, 1945). According to practical experience it is extremely difficult to obtain satisfactory blends of natural fibers such as cotton or wool with synthetic or artificial fibers. In general the introduction of rayon or other man-made fiber into cotton or wool either detracts from the quality of the natural fiber or hampers production by processing troubles not encountered with the natural fibers alone.

*MILITARY TEXTILES.* Thomas W. Jones, Quartermaster Corps. *Am. Wool & Cotton Reptr. 59,* No. 7, 11-12 (Feb. 15, 1945). Procurement problems in supplying the armed forces with textiles are partly quantitative and partly qualitative; many of them are technical in nature. As compared with civilian requirements cost is less important and quality is more important. Resistance to water, fire, shrinkage and mildew may be a life or death matter in military service instead of merely a problem in consumer satisfaction. In general, quality standards have stood up better than was anticipated.

*TEXTILE NOMENCLATURE.* R. W. Vose, Chicopee Mfg. Corp. *Rayon Textile Monthly 26,* 21 (Jan. 1945). New definitions are offered (for consideration by ASTM Committee D-13) for the terms *bleaching, fiber, filament, textile* (as noun and adjective), *textile fabric, cloth* and *knit fabric.*

---

*DECORATIVE FABRIC.* Harold Fountain (to United Merchants & Mfrs., Inc.). USP 2 368 706, Feb. 6. A double faced multicolor flock printed fabric is made of a relatively coarse weave with colored pattern areas produced from two different blends of flock fibers differing in staple length and color. These mixed flock fibers extend through the interstices of the cloth and project from both faces.

*HOSIERY.* George F. Lang. USP 2 368 714, Feb. 6. Sheer stockings have a strain distributing top of more durable fabric, knit to the leg by chain stitches and carrying a series of snap fasteners.

*COMPOSITE FABRIC.* Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 369 651, Feb. 20. An open mesh woven base is embedded in a knit fabric in such a way that the loop chains of the knit fabric lie on one face of the woven fabric and the knots anchoring the knit fabric lie on the other face.

*BEADED FABRIC.* Henry Freiberg (½ to Samuel Freiberg). USP 2 370 028, Feb. 20. A fiber surface is decorated by applying settings and filling each setting with a viscous hardenable resin which is hardened after at least partially penetrating the fabric.

*KNIT FABRIC.* Edgar W. Clarke (to Interwoven Stocking Co.). USP 2 370 450, Feb. 27. A terry fabric is knit with body thread and terry thread in such a way that the terry thread forms one face of the fabric and also forms terry loops on the other face so that the body thread is concealed.

*TUBING.* Alonzo E. Albin (to Bemis Bro. Bag Co.). Can. P. 425 540, Feb. 13. Spirally seamed tubing is made from a single flat strip of fabric by marking the edges at selected intervals, then seaming together on a stationary sewing machine so that marks on opposite edges meet and twist occurs in the nonrotating collapsed tubing. The product is continuously untwisted and rolled simultaneously around the axes perpendicular and parallel to the tubing.

*BEADED FABRIC.* Henry & Samuel Freiberg (½ to Henry Freiberg). Can. P. 425 599, Feb. 13. A textile fabric is beaded by depositing thereon drops of an unhardened urea-formaldehyde type resin mixed with a hardening agent, and heating the fabric to harden the resin.

---

CLOTH, STRANDS AND TAPE, ASBESTOS. Joint Army-Navy Specification 32-D-11d (supersedes 32C11c) Bureau of Supplies & Accounts, U. S. Navy, Washington, 1944; 7 pp.; gratis.

TEXTILES PLANNED FOR POSTWAR. Cotton, Atlanta 3, Ga., 1945.

Abstracted in *Cotton 109,* No. 2, 105-7, 132 (Feb. 1945).

COTTON FABRICS FOR DINGHIES. (Superseding DTD 524 and DTD 499). Specification DTD 524A, Ministry of Aircraft Production. HM Stationery Office, London WC2, 1944; price 7d.

FLAX CANVAS, 14 OUNCE. Specification DTD 642, Ministry of Aircraft Production. HM Stationery Office, London WC2, 1944; price 7d.

INSERT KNIT WOOL (FOR TYPE A-11A & D3A GLOVES). U. S. Army Specification 94-3190-B (supersedes 94-3190-A and 3186). Wright Field, Dayton, Ohio 1944; 6 pp.; gratis.

PRINCIPLES OF COLD WEATHER CLOTHING AND EQUIPMENT. War Dept. Technical Manual 10-275, Supt. of Documents, Washington, 1944; 82 pp.; price 20c.



### V, 8. Applications: nontextile uses of fabrics

#### V, 8a. Insulation

*WOOL FELT.* W. H. Lehmberg, Felt Association, Inc. *Chem. Eng. 67,* 93-9, 135 (Feb. 1945). Wool felts range from a few ounces up to 70 pounds per square yard in weight, with a wide range of softness and thickness. Wear resistance is directly proportional to density and fiber quality, and inversely proportional to applied loads. Thermal conductivity is low among insulating materials and blends of wool felt with kapok fibers produce some excellent heat and sound insulating products.

---

*INSULATED WIRE.* William T. Barrans & Paul M. Cole (to Western Electric Co.). Can. P. 425 505, Feb. 6. A machine for braiding a cover on insulated wire includes a device for inserting in the covering a flexible strand under tension with the aid of hollow warp guides having guiding rolls at the top to carry the strand under tension to the braiding point.

*INSULATION.* Ben K. Ford (to Western Electric Co.). Can. P. 425 506, Feb. 6. A machine for covering insulated wire winds a strand around the wire and forms a rib thereon with threads which are smaller than the strand, then knits a covering of the same thread over the rib and the insulated wire.

---

ELECTRICAL INSULATION MATERIAL. Catalog EL44-7, Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Reviewed in *Chem. Eng. News 23,* 95 (Jan. 10, 1945).

#### V, 8b. Coated or impregnated products

*COATED FABRICS.* E. A. Clare, Athol Mfg. Co. *Textile Colorist & Converter 67,* 614-5 (Feb. 1945). Coating fabrics with vinyl resins and certain other synthetic plastics offers considerable technical advance over the earlier art of pyroxylin coated fabrics. Fabrics produced to government specifications for military use can be given many attractive effects for civilian consumption. An example is a coated voile for umbrellas which will stand 10 pounds hydrostatic pressure in the Mullen test and weighs only 2 ounces per square yard.

*PROTECTIVE COATINGS.* Jos. J. Mattiello, Hilo Varnish Corp. *Chem. Eng. News 23,* 136-43 (Jan. 25, 1945). Advances in paints, varnishes, lacquers, enamels and plastics in 1944 in-

clude chemical processes for improving drying oils; new uses for synthetic resins; new pigments and pigmentation processes; improved emulsion paints; carboxymethyl-cellulose with extended viscosity range; and improved coatings for textiles.

*RESINS ON FIBERS.* D. H. Powers, Monsanto Chemical Co. *Am. Dyestuff Reptr. 34,* P77-9 (Feb. 12, 1945). Numerous resins have been used to replace natural rubber in coated fabrics and synthetic rubber, especially butyl rubber, has found a a place for two-ply fabrics. Among the largest volume consumers of resins for fabric treatment is the fireproof, waterproof, mildewproof duck made for the army. Resins have also been used for shrinkproofing wool and resin dispersions have produced a variety of useful effects on fabrics.

*FOOTWEAR.* William A. Rossi. *Plastics 2,* No. 2, 48-50 (Feb. 1945). Plastics have numerous uses in shoe manufacture. Among them are decorative effects such as that produced by laminating black lace between thin transparent sheets of a vinyl resin. Resin coated cloth toe tips and decorative effects produced by application of plastic to a fabric base are other examples.

---

*IMPREGNATING FABRICS.* Rudolph H. Czeczowitzka (to Texproof, Ltd.). USP 2 370 290, Feb. 27. A tank for impregnating fabrics with compositions containing a volitile liquid has at least one roll around which the fabric passes under the liquid surface. The lid is so arranged that its edge and the edge of the tank act as spreader blades for the emerging fabric, and beneath the lid are 2 rods around which the fabric must pass before emerging.

*RUBBERIZED FABRIC.* Max Engler (to General Tire & Rubber Co.). USP 2 370 298, Feb. 27. Apparatus for coating fabric with rubber cement is arranged for continuous movement of the fabric in superposed runs of opposite directions. Guide rolls at the end of these runs are driven by the fabric whereas the applicator roll has a separate drive.

*FILTER.* Hubert F. Jordan & George E. Shriver (U. S. Rubber Co.). Can. P. 425 593, Feb. 13. A laminated filter sheet is made of perforated rubber cemented with a rubber cement to an open mesh fabric made of rubberized thread.

*RUBBERIZED NET.* Thomas G. Hawley and Antonio H. Dorazio (to US Rubber Co.). Can. P. 425 736, Feb. 20. An open elastic network of rubberized fabric is made by spraying a rubber dispersion on the moving fabric while moving the spray orifices in such a way as to form a regular open network pattern.

---

GLOVES, CANTON FLANNEL, LATEX COVERS. Joint Army-Navy Specification 27G14a. Bureau of Supplies & Accounts, U. S. Navy, Washington, 1944; 1 p.; gratis.



### V, 8c. Laminates

*NEW TARPAULIN.* Anon. *Chem. & Eng. News 23,* 282-3 (Feb. 10, 1945). The current specification for large burlap paulins (OQMG No. 192) calls for either one or two sheets of kraft paper laminated to burlap and asphalt adhesive. The material is not only much cheaper than cotton duck but is lighter and less bulky. By request of the War Department the Institute of Paper Chemistry is engaged in a project for improvement of the present specification product. Protection for Quartermaster Corps supplies shipped to all parts of the world has in general been satisfactory but greater durability is sought.

*PAPER LAMINATES.* E. C. O. Erickson & George E. Machin, Forest Products Laboratory. *Plastics 2,* No. 2, 26, 28-30, 106-9 (Feb. 1945). A new paper base laminate with more than twice the tensile strength of the best paper base laminates is Papreg, developed through research at the Forest Products Laboratory. Stress-strain curves are shown for tensile and compressive strength. Other mechanical and thermal properties of Papreg are also tabulated or illustrated by curve charts. Both parallel-laminated and cross-laminated products were included in the tests.

*LAMINATES.* Frederick Z. Pearson, Lyon Metal Products Co. *Plastics 2,* No. 2, 21-4, 124-7 (Feb. 1945). Laminates are extremely adaptable as to properties and application since there are at least 10 different resins commercially available and the useful fillers cover a wide range of paper and cloth products, asbestos, fiber glass, etc. Industrial applications depend partly on resistance to chemicals and partly on good mechanical and electric properties. The rayon industry is an important consumer of laminates in spinning parts, bobbins, brackets, pipes and work table covers. Decorative applications depend on strength and light weight as well as good appearance.

*TRANSPORT DESIGN.* Carl Sundberg & Montgomery Ferar. *Plastics 2,* No. 2, 82-3, 105 (Feb. 1945). It seems probable that the transportation field will be much affected by the development of low pressure laminates since the new process permits relatively inexpensive production of large shapes with high strength. Tank trucks for hauling milk and liquid fuel, airplanes, boats and railway trains will probably utilize low pressure molded laminates in designs widely different from those now prevailing.

---

*STIFFENED FABRIC.* Alfred A. Lawrence & Shailer L. Bass (to Dow Chemical Co.). USP 2 370 550, Feb. 27. A multi-ply stiffened fabric which is permeable to air and water vapor, with pleasing handle and appearance, is formed of fabric

sheets each separated from the next by a preformed water-insoluble thermoplastic cellulose ether film. Products made of this fabric have a high resistance to wear even after repeated laundering.

## VI. FINISHING

### VI, 1. Preparation

#### VI, Ia. Boiling and scouring

*STAINS ON WOOL.* Anon. *Dyer & Textile Printer 93,* 105-6 (Feb. 2, 1945). Rust stains present a serious problem in scouring wool piece goods. They may appear as long streaks or large blotches or in small scattered droplets. A simple method of water purification is described which aids in preventing rust stains.

#### VI, 1d. Drying and conditioning

*TIRE CORD.* Anon. *Cotton 109,* No. 1, 85-6 (Jan. 1945). Illustrated description of the application of high frequency heat to setting twist in rayon tire cord.

---

DRYING OF TEXTILES. Albert C. Walker (chairman). Dept. of Information Reports, Textile Research Institute, New York City, 1944; price 75c.

Reviewed in *Textile Research 14,* 356 (Nov. 1944).

### VI, 6. Sizing and finishing

*CELLULOSE FINISHES.* D. M. Martin, General Dyestuff Corp. *Rayon Textile Monthly 26,* 25-8 (Jan. 1945). Permanent cellulose finishes have progressed far beyond mercerization and cold $H_2SO_4$ treatment, the pioneer methods relying on the cellulose of the fiber itself. Regenerated cellulose, applied from a viscose or cuprammonium solution, has many uses. Some are military and some for civilian consumption. Catalytically activated caustic (cac) solutions of cellulose are also effective.

---

*TRANSPARENTIZING.* James W. Stallings (to Rohm & Haas Co.). USP 2 368 948, Feb. 6. Novel effects are obtained by sizing a multifilament yarn with an aqueous dispersion of an acrylonitrile: acrylic ester copolymer. Fabric made with this yarn acquires a transparent effect when wetted with water and dried without tension above the fluxing point of the resin.

*TREATING TEXTILES.* Charles Graenacher, Richard Sallmann, Otto Albrecht and Jost Frei (to Soc. of Chemical Industry in Basle). USP 2 370 031, Feb. 20. Textile materials are improved by treatment with a quaternary ammonium salt or an isothiourea salt joined through an ether, sulphide or carboxamide linkage to a halogenated hydrocarbon radical in which the carbon atom adjacent to the oxide, sulfide or amide linkage may have 1 or 2 short chain alkyl or halogenated alkyl substituents.

*TEXTILE FINISH.* Gerry P. Mack (to Advance Solvents & Chemical Corp.). USP 2 370 057, Feb. 20. A dressing and finish for fibrous material is prepared in the form of an aqueous emulsion containing about 100 parts by weight of a tough elastic polyisobutene, 136-306 parts of a resinous pinene polymer or a coumarone-indene resin and 0.5-10% (calculated on total solids) of methylcellulose.

*LAUNDRYFAST FINISH.* Donald W. Light (to Am. Cyanamid Co.). USP 2 370 362, Feb. 27. A laundryfast finish is imparted to fabrics by treatment with an oil-in-water type emulsion of an alkyd resin and a melamine-formaldehyde resin.



## VII. COLOR

### VII, 1. Bleaching

*FAST BLEACHING.* Anon. *Ind. Bull. No. 207,* 1-2 (Feb. 1945). News note concerning continuous hydrogen peroxide bleaching in rope form as the fastest existing method for cotton piece goods. A new open width conveyor type steamer recently introduced by Mathieson Alkali Works also facilitates bleaching with hypochlorite or peroxide bleaches.

---

*DYEING RAYON.* Henry C. Olpin & Christopher S. Argyle (to Celanese Corp. of Am.). USP 2 368 723, Feb. 6. Cellulose ester rayon is dyed with an ester or amide of a nitrodiarylamine carboxylic acid.

### VII, 2. Dyeing

*DYE ABSORPTION.* Arthur N. Patterson, (S. Stroock and Co.). *Rayon Textile Monthly 26,* 29-30 (Jan. 1945). Both Aralac and soy protein fiber have good affinity for acid dyes. Their reactions with dyes are not the same as the reactions of wool, but dyeings are satisfactory either with the artificial protein fiber alone or with wool in 50:50 blends.

*DYEING RAYON.* C. C. Wilcock, *Dyer & Textile Printer 93,* 127-9 (Feb. 2, 1945). The high tenacity rayons known as Tenasco and Durafil tend to give lighter shades with the same amount of dye than standard viscose yarn. Methods for effective dyeing of these yarns are discussed.

---

*HANK POLE.* Samuel R. T. Freeman (to Mellor Bromley & Co., Ltd.). USP 2 369 121, Feb. 13. A pole for holding yarn hanks in a dye bath has two side plates placed edgewise to the direction of flow of the dye liquor. The two plates are joined by lengths of tubing so that dye liquor flows freely between the plates.

*DYEING AND FINISHING.* Ernst Shubert

& Heinz Pierer. USP 2 369 613, Feb. 13 (vested in the Alien Property Custodian). In simultaneous dyeing and finishing of fabrics the material is impregnated first with a salicylide or like derivative of carbazole, then with an aqueous solution of urea, formaldehyde and diazotized 3-methoxy-6-methyl-N-benzoyl-p-phenylene-diamine. The synthetic resin is hardened and the dye is fixed by heat.

*DYEING MACHINE.* William M. Wentz (to E. I. du Pont de Nemours & Co.). USP 2 369 696, Feb. 20. A machine for continuous dyeing and treating of piece goods in open widths has two reels dipping in the treating bath and arranged so that the cloth hangs in loose folds between the rods of the reel and is fed continuously from one reel to the other so that exposure to the bath is prolonged.

*MARKING INK.* John Miglarese (to National Marking Machines Co.). Can. P. 425 467, Feb. 6. Invisible ink (visible in ultraviolet light) for identification marking of fabrics, e. g. before dry cleaning, includes a resinous binder and a hydrochloride of alpha-phenyl-m-aminobenzimidazole.

### VII, 2a. Direct

*DYEING ACETATE.* George Broun. *Southern Knitter 9,* No. 1, 24, 26, 45 (Jan. 1945). Methods are described for application of acetate dyes to ladies' hose with acetate rayon legs and viscose or mercerized cotton tops and mercerized cotton heel and toe. Dyeing of nylon with acetate dyes is also discussed.

*UNION DYEING.* Fred Smith. *J. Soc. Dyers Colourists 61,* 8-12 (Jan. 1945). Applications of diazotisable direct dyes, sulphur dyes, navy blues and a variety of special dyes to blends of wool with cotton or acetate rayon can be made to yield excellent results. Frequently the judicious use of a resist is helpful in dyeing blended fabrics.

### VII, 2b. Developed dyeing

*PRINTING ROLL.* Rudolph Heberlein & Max Fretz (to Heberlein Patent Corp.). USP 2 370 461, Feb. 27. A roll for half-tone intaglio textile printing is made from an altered half-tone by reproducing it photographically on the printing roll surface and etching the roll to provide a printing surface in which the darker tone areas of the image form continuous channels resembling a grid.

### VII, 2c. Vat

*DYEING RAYON.* Anon. *Dyer & Textile Printer 93,* 125-6 (Feb. 2, 1945). Notes on chemicking colored cotton and rayon fabrics with particular reference to the sensitivity of Indanthrene Blue R dyeing to this treatment. When color changes for this cause it can be restored by a light reducing treatment.

---

*DYEING RAYON.* George W. Seymour & Victor S. Salvin (to Celanese Corp. of Am.). USP 2 368 681, Feb. 6. Cellulose acetate is dyed with an anthraquinone dye formed by aldehyde condensation of a dihydroxylamino- or diaminoanthrarufin. The dyed acetate rayon is fast to acid fading.

*DYEING RAYON.* George W. Seymour & Burnard T. Pull (to Celanese Corp. of Am.). USP 2 368 682, Feb. 6. For acid fast effects cellulose ester rayon is dyed with an anthraquinone dye formed by aldehyde condensation of a dihydroxylaminoanthrarufin.

### VII, 2d. Printing

*PRINTING NYLON.* Charles F. Miller (E. I. du Pont de Nemours & Co.). USP 2 368 940, Feb. 6. Nylon dyed with a dischargeable ground color is printed with a vat dye paste in which the reducing agent is an alkali metal formaldehyde sulfoxylate and the only added alkali is 0.1-0.5% of an alkali metal carbonate.

*SCREEN PRINTING.* Robert F. Foard. USP 2 369 290, Feb. 13. Screen printing on cloth is effected on a work table over which a backing sheet is moved either by a fast drive or a slow drive, the feed of the drive being selected according to requirements during the process.

### VII, 3. Defects and dye failure; causes and prevention

*DYE FASTNESS.* Charles H. Giles & Donald G. Wilkinson (to Imperial Chemical Industries, Ltd.). USP 2 369 122, Feb. 13. Gas fading of dyed acetate rayon is prevented by treatment with an N, N′-diarylformamidine in which there may be one or two alkyl substituents not higher than butyl.

## VIII. PROOFING

PROOFED COTTON FABRIC (SINGLE PLY). (Supersedes DTD 531). Specification DTD 531A, Ministry of Aircraft Production. HM Stationery Office, London WC2, 1944; Price 7d.

### VIII, 1. Waterproofing; weatherproofing; moistureproofing

*WATER-REPELLENT FABRIC.* Walter Kaase & Ernst Waltmann (to Heberlein Patent Corp.). USP 2 370 405, Feb. 27. Fabrics are rendered water-repellent by impregnation with an isocyanate of a long chain aliphatic or aliphatic-aromatic radical containing a bridging atom or group such as an ether, sulfide, ester or amide.

*PROOFING MILLBOARDS.* Alfred M. Cowan. Can. P. 425 527, Feb. 13. Asbestos millboard is proofed against water, oil and gasoline by treatment with a mixture of raw and boiled linseed oil and a water-insoluble soap. The treated millboard is baked about 40 minutes at about 240°F.

### VIII, 4. Flameproofing

*FLAMEPROOFING.* Frederick W. Hochstetter (to Hochstetter Research Laboratories, Inc.). USP 2 368 660, Feb. 6. Cellulosic materials are rendered nonflammable by treatment with a reaction product of hexamethylenetetramine and a hydroxybenzylalcohol.

*FLAMEPROOF FABRIC.* Charles F. Martin (to Dominion Oilcloth & Linoleum Co., Ltd.). Can. P. 425 400, Feb. 6. A flameproof and moistureproof fabric which is soft and flexible even at very low temperatures is coated and impregnated with a composition of chlorinated wax, tricresyl phosphate, dibutyl phthalate, magnesium silicate, antimony oxide and gasoline.

---

PAPER, SHEATHING, FLAMEPROOF AND WATER REPELLENT. Joint Army-Navy Specification 59-P-7, Bureau of Supplies & Accounts, U. S. Navy, Washington, 1944; 4 pp.; gratis.

### VIII, 5. Creaseproofing

*CREASEPROOF FABRIC.* Samuel Frauenfelder (to Heberlein Patent Corp.). Can. P. 425 694, Feb. 20. Cellulosic fabrics are creaseproofed by treatment with formaldehyde in presence of an acid catalyst followed by fixation and drying under such conditions that formaldehyde reacts with the cellulose to form a compound which improves dimensional stability of the fabric.

### VIII, 6. Shrinkproofing

WOOL SHRINKAGE CONTROL WITH LANASET. Tech. Bull. No. 766, Calco Chemical Division, Am. Cyanamid Co. Bound Brook, N. J.

Reviewed in *Am. Dyestuff Reptr. 34,* 18 (Jan. 1, 1945).

### VIII, 7. Proofing against chemicals, solvents, perspiration, etc.

*GASPROOF BAGS.* Don Ray. USP 2 370 419, Feb. 27. Lightweight bags for protecting foods, medical supplies, and other materials from contamination by combat gases are made of a nylon sheeting composition with a heat sealing lining bonded thereto by a polyvinyl alcohol cement.

---

PETROLPROOF FABRIC (2-PLY). Specification DTD 675, Ministry of Aircraft Production. HM Stationery Office, London WC2, 1944; price 1s 1d.

## IX. TESTING AND ANALYSIS

*TEXTILE TESTING.* F. T. Mosedale, U. S. Testing Co. *Rayon Textile Monthly 26,* 31 (Jan. 1945). Textile testing is making a strong effort to keep up with textile progress, e. g. in testing fabrics made of the newer fibers, and products of new finishing or proofing agents.



### IX, 1. Physical and mechanical

*QUALITY CONTROL.* O. P. Beckwith, Alex. Smith & Sons Carpet Co. *Textile Research 14,* 319-325 (Oct. 1944). The quality control chart technique has given good results when properly used in applied textile research. Examples include application of the centrifugal method to abrasion tests; the quality of goods put out by various textile machines; and effects of humidity changes on rovings.

*MICROSCOPY.* Geo. L. Royer, Am. Cyanamid Co. *Rayon Textile Monthly 26,* 32 (Jan. 1945). The microscope is a potent tool for studying dye penetration and for other studies in quality control for dyers and finishers. Examination of specks, spots and other defects is greatly improved by microscopy.

---

VAPOR TRANSMISSION ANALYSIS OF STRUCTURAL INSULATING BOARD. Frank B. Rowley and C. E. Lund, Eng. Experiment Station Bull. 22, University of Minnesota, 1944; 71 pp.; price 40¢.

Reviewed in *Chem. & Eng. News 23,* 279 (Feb. 10, 1945).

### IX, 1a. Fibers

*CONDITIONING OVEN.* Anon. *J. Sci Instruments 21,* 200 (Nov. 1944). A new Baird and Tatlock oven for humidity conditioning of samples utilizes the Obermiller principle of humidity control (salts with known vapor pressure at stated temperatures). The oven can also be used for gentle drying of sensitive materials.

### IX, 1b. Yarns

*STRENGTH UNITS.* S. L. Gerhard, Textile Division, U. S. Rubber Co. *Textile Research 14,* 374-8 (Nov. 1944). Length units and other dimensions for expressing strength of fibers and yarns are discussed in the light of factors influencing accuracy.

*STRESS-STRAIN TESTER.* C. W. Harris, B. F. Goodrich Co. *Rev. Sci. Instruments 16,* 5-6 (Jan. 1945). A new autographic stress-strain tester, suitable for textile cords, is small and has low inertia. It is connected to the specimen by a wire cable and can be used in difficultly accessible locations for tests under a wide variety of conditions, e. g. in refrigerators or ovens.

*YARN STRENGTH.* George W. Pfeiffenberger, Cotton and Fiber Branch, War Food Administration. *Textile Research 14,* 421-7 (Dec. 1944). A study of the influence of loading speed on yarn strength and strength variability in twisting yarns with the Moscrop single strand tester indicates that slow loading (1′ per min.) is best. The Moscrop is an English tester which accommodates six bobbins at a time, automatically threading successive 10″ lengths of yarn into the breaking clamps and recording the strength on a chart.

*TESTING MACHINE.* Henry J. Sang. USP 2 370 196, Feb. 27. A recording tensile tester has a tapered drive for the recording device so that the indicated load is automatically converted into terms of weight per unit cross sectional area of the test specimen.

### IX, 1c. Fabrics; foils; films

*PERCHING.* Anon. *Am. Wool & Cotton Reptr. 59,* No. 7, 13, 36 (Feb. 15, 1945). Practical suggestions on the proper perching of cloth for inspection purposes include a system of symbols for marking defects.

*INSPECTION READEX.* Lucille Finley, Texas Technological College. *Cotton 109,* No. 2, 102-4 (Feb. 1945). The Readex is an instrument originally designed for enlarging microprint. It has been found useful in the Cotton Research Laboratory at Texas Technological College for examination of yarns and fabrics. The instrument has been modified to permit photographing enlarged sections of samples for detecting and identifying defects, measuring variability before and after exposure to stress or abrasion and detecting small imperfections in yarn.

*TEXTILE PHOTOMICROGRAPHY.* Martin H. Gurley, Jr., Gustavus J. Esselen, Inc. *Textile Research 14,* 366-9 (Nov. 1944). Photomicrographs of fibers or fabrics are important for legal purposes. An illustrative example is the use of photomicrography to demonstrate the principle of activating or cementing fibers in a yarn which is used in the bonding layer of fused-collar fabric. Photomicrographs are admissible as evidence in courts, e. g. in patent litigation.

*EXTENSOMETER.* W. Lethersich, British Electrical and Allied Industries Assoc'n. *J. Sci. Instruments 21,* 180-3 (Oct. 1944). A precision instrument which utilizes a simple optical arrangement can be adapted for measuring Poisson's ratio (lateral strain to longitudinal strain). Only one image adjustment is needed. Tests are reported with rubber, urea-HCHO resin, Diakon and Elephantide.

*TESTING WATERPROOFNESS.* George J. Nandicose & Bertel A. Reiberg, Lowell Textile Institute. *Am. Dyestuff Reptr. 34,* P37-40 (Jan. 15, 1945). The Suter tester for measuring water permeability of proofed fabrics is compared with the AATCC tester. Both use hydrostatic pressure. Each has certain merits and demerits but in a general way the AATCC tester permits easier temperature control and is preferable.

*CAMOUFLAGE SAMPLES.* E. I. Stearns, Am. Cyanamid Co. *Textile Research 14,* 326-32 (Oct. 1944). A selected ordinate method for interpreting spectrophotometric data has been successfully applied to spectrophotometer curves for camouflage samples to determine whether or not they meet U. S. specifications.



---

*TESTING HOSIERY.* Charles Dangelmajer. USP 2 369 660, Feb. 20. An instrument for directly testing the run-resistance of stockings has a stretching frame on which a circular area of the stocking with a broken thread at the center is isolated and stretched by the measured force of an inflation bag.

## IX, 2. Chemical

### IX, 2a. Fibers

### IX, 2d. Textile chemicals and dyes

*FUNGICIDE ANALYSIS.* Dmitry A. Shiraeff, General Dyestuff Corp. *Am. Dyestuff Reptr. 34,* 15-16 (Jan. 1, 1945). Preventol GD, a proprietary mildewproofing agent, is 2, 2′-dihydroxy-5, 5′-dichlorodiphenylmethane. The present official analytical method for Preventol GD on textiles is too long and requires special equipment and skill. A faster, simpler procedure for colorimetric determination is described and illustrated.

## XIII. TEXTILE MILLS

### XIII, 2. Machinery

*MILL DEVELOPMENTS.* Anon. *Am. Wool & Cotton Reptr. 59,* No. 8, 14, 32 (Feb. 22, 1945). The Newnan (Georgia) Cotton Mills and some New England mills are successfully operating with wool and worsted fabrics and artificial fiber blends on cotton mill equipment and by cotton mill methods. Other accomplishments of practical mill men include Indanthrene dye recovery, adapting looms to wider widths, and a one-process system of drawing in the manufacture of worsted yarns.

### XIII, 4. Materials, handling and transport

*STORING MATERIAL.* Julian W. Hughes. *Southern Knitter 9,* No. 1, 29-30, 32 (Jan. 1945). Efficiency in storing yarn, yarn handling equipment, machine parts and other materials in a knitting mill can be improved in a variety of ways. Several ideas for promoting efficiency are described and illustrated.

*CONVEYOR SYSTEM.* Edmund I. Leeds, Jr. *Cotton 109,* No. 2, 99-101 (Feb. 1945). A major improvement under consideration by many mills for postwar insulation is mechanical conveying of material. A conveyor system now in operation at the Maverick Mills in Boston is described and illustrated. The spinning room conveyor system has a variable speed drive and is rectangular with 4 stations. The warper and slasher rooms have overhead conveyors for beams and rolls of cloth.

### XIII, 5. Lighting

*MILL LIGHTING.* Waldemar Schweisheimer. *Textile Colorist 67,* 62 (Feb. 1945). Correct illumination and color harmony for textile workers are discussed from the medical standpoint. A gray floor paint with 60% reflection factor increased illumination considerably so that machine tool operators were able to work both more efficiently and more safely.

### XIII, 7. Process control; control instruments

*ELECTRONIC CONTROLS.* Anon. *Gen. Electric Rev. 48,* 39-40 (Jan. 1945). Two recent developments for textile machinery are a rewinder drive with electronic control of armatures and shunt fields of the d-c shunt-wound motors, and a cutoff register control which replaces the old slow magnetic contractors with long-lasting high vacuum electron tubes.

*ELECTRONIC CONTROL.* Anon. *Textile Age 9,* No. 1, 96, 98-9 (Jan. 1945). Among the actual and potential applications of electronic control in textile manufacturing are a seam detector to open the polishing rolls on a calendar long enough to allow the seam to pass through; a thread break detector for thread beamers; squaring of warp and weft in finishing mills; precision timing devices and control of electrocoating of fabrics in pattern design.

### XIII, 8. Water supply

INDUSTRIAL WATER CONTROL. Tech. Publication 245, Wallace & Tiernan Corp., P. O. Box 178, Newark 1, N. J., 1944.

Reviewed in *Chem. Eng. News 23,* 95 (Jan. 10, 1945).

## XIV. TEXTILE RESEARCH

*RESEARCH PROJECTS.* Anon. *Textile Research 14,* 400-8 (Dec. 1944). Brief report on research projects of the Textile Research Institute: Radiant Drying (R. H. Wilhelm); Warp Sizing (William E. Shinn); Cotton Carding (Elliot B. Grover); Applied Research (Giles E. Hopkins); Postwar Competitive Status of Textile Industry as an economic research project (A. M. McIsaac).

*FUNDAMENTAL RESEARCH.* Henry Eyring, Princeton University. *Textile Research 14,* 396-9 (Dec. 1944). The joint research program of the Textile Foundation and the Textile Research Institute is discussed. Among the fundamental studies will be the mechanism of dyeing; relaxation of stress under constant strain in cellulose fibers, and the theory of deformation in individual fibers.

*TEXTILE RESEARCH.* Julian F. Smith, Institute of Textile Technology. *Cotton 109,* No. 1, 77-9, 111 (Jan. 1945). Research is a matter of seeking information directly from nature and becomes particularly effective when integrated with the education of new workers in the research field.

*RESEARCH AND EDUCATION.* Symposium, AATCC. *Am. Dyestuff Reptr. 34,* P2-13 (Jan. 1, 1945). Introduction by William D. Appel and Miles A. Dahlen; papers by S. C. Lind, Undergraduate Course in Textile Chemistry; Hugh S. Taylor, Higher Education and Research for Textile Chemists; Andrew Fraser, Jr., Professional and Economic Status of the Textile Chemist.

*TEXTILE RESEARCH.* Douglas G. Woolf, Textile Research Institute. *Textile Research 14,* 379-80 (Nov. 1944). The transition period between the end of the war and reconversion will provide an appropriate breathing spell for assigning long range postwar research and development activities. The textile depression which preceded the national depression some years ago dried up the little textile research then existing instead of increasing research investments. The industry has not yet recovered from the effects.